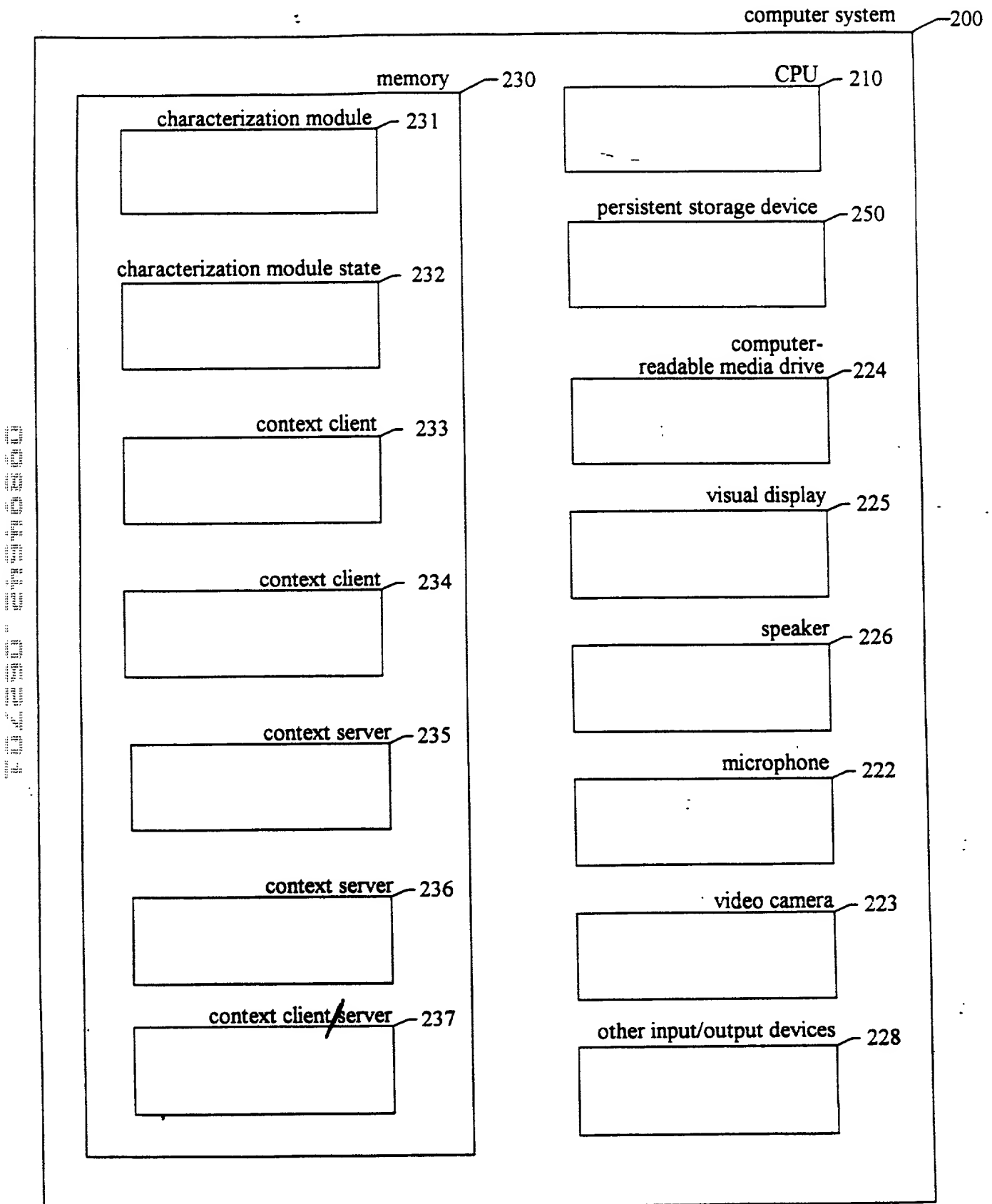


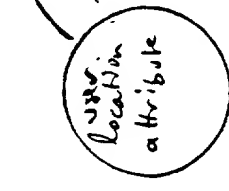
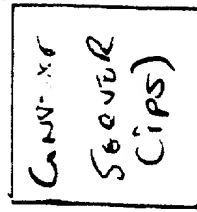
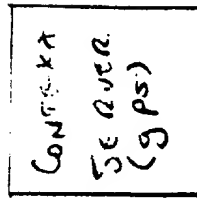
**Fig. 1**



**Fig. 2**

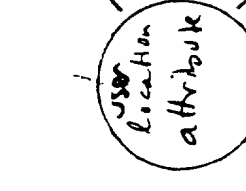
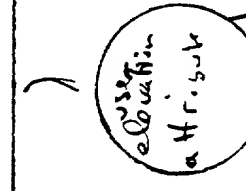
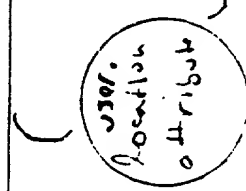
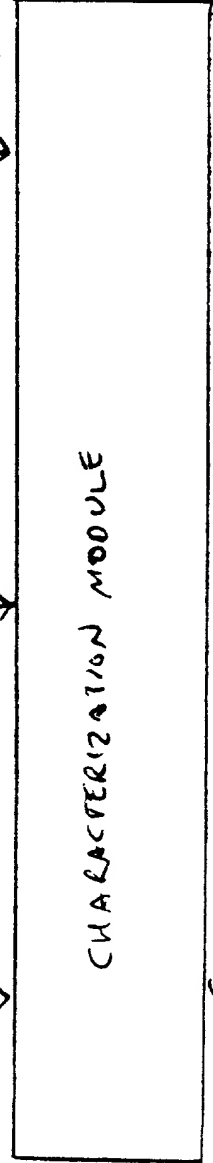
310

320

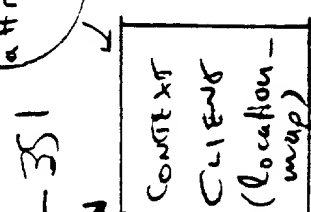
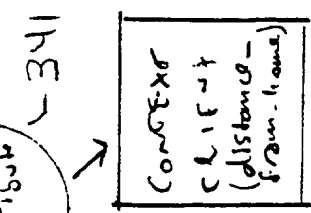


300

330



region boundary



340

350

FIG. 3

context server table

context server name	version	installation date	filename	request handler
gps	1	2/10/2000	gps.exe	(reference)
ips	1	2/21/2000	ips.exe	(reference)
location_region_analysis	1	2/10/2000	l_r_a.exe	(reference)

FIG 4

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	0

FIG 5

**FIG 6**

FIG 7

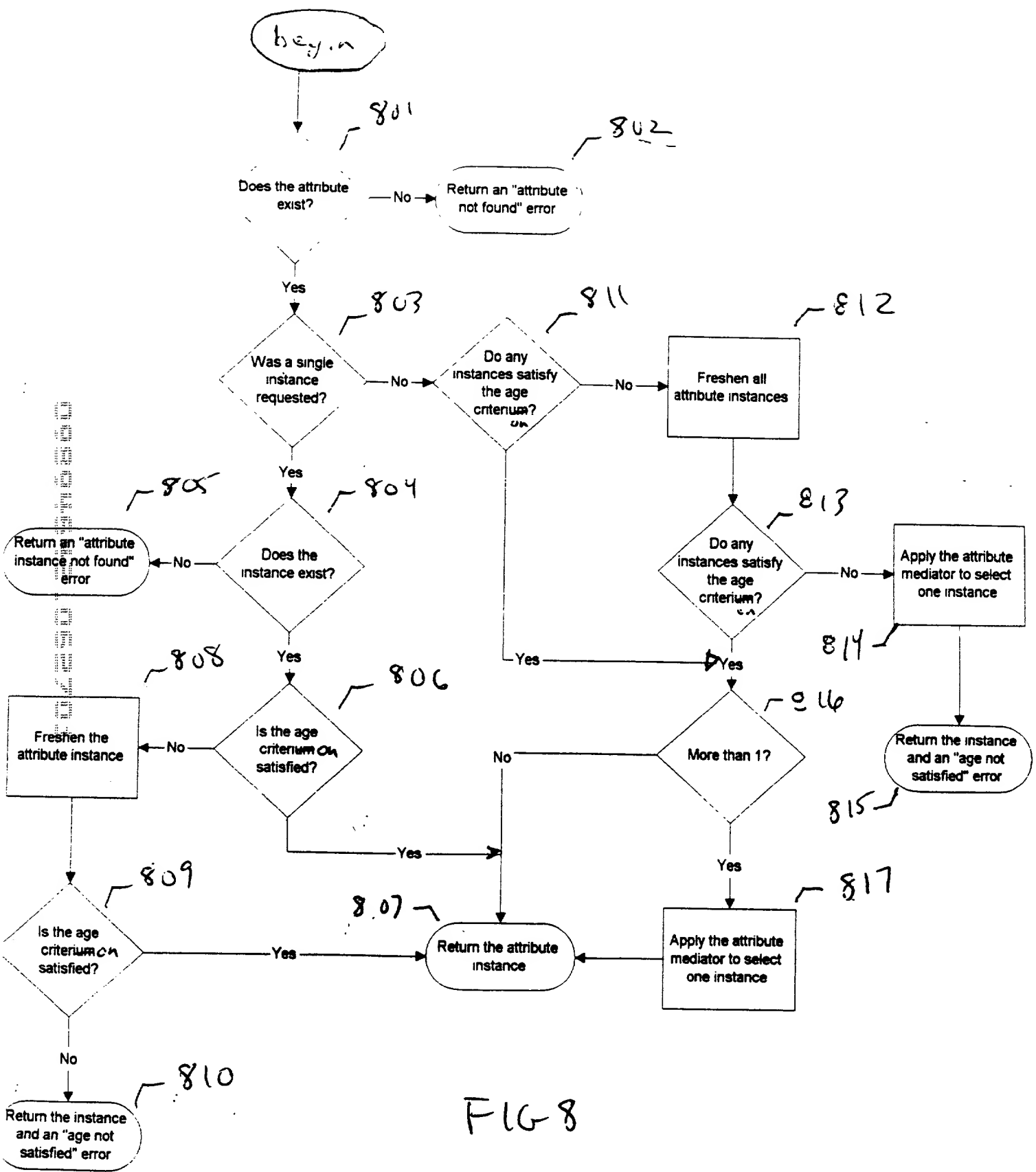


FIG 8

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
user.in_region	region analysis	none	none	none	none	1

FIG 9

condition table

condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
in region true	region analysis	user.in_region	none	TRUE	=

FIG 10

\\Sea\_apps\Patent\Clients\Tangis (29443)\8005 - CM API\misc\tables.doc

1100

condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundaries_crossed	region_analyses	in_region_true	TRUE or FALSE	30	13:11:29.101 2/22/2000	(reference)	no

1118

1201

FIG 11

1200

condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundaries_crossed	region_analyses	in_region_true	TRUE or FALSE	30	13:11:59.101 2/22/2000	(reference)	yes

1201

1218

FIG 12

\\Sea\_apps\Patent\Clients\Tangis (29443)\8005 - CM API\misc\tables.doc



FIG. 13

1310

1320

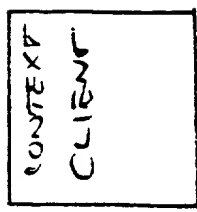
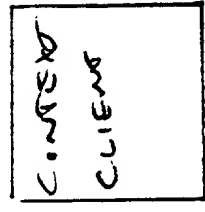
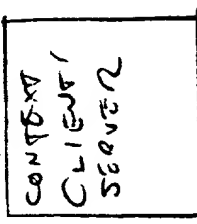
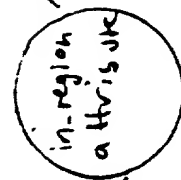
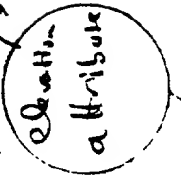
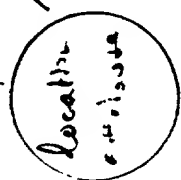
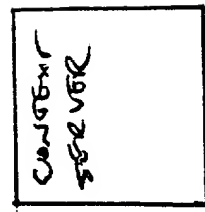
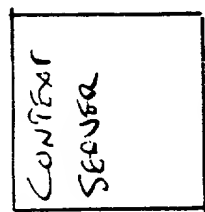
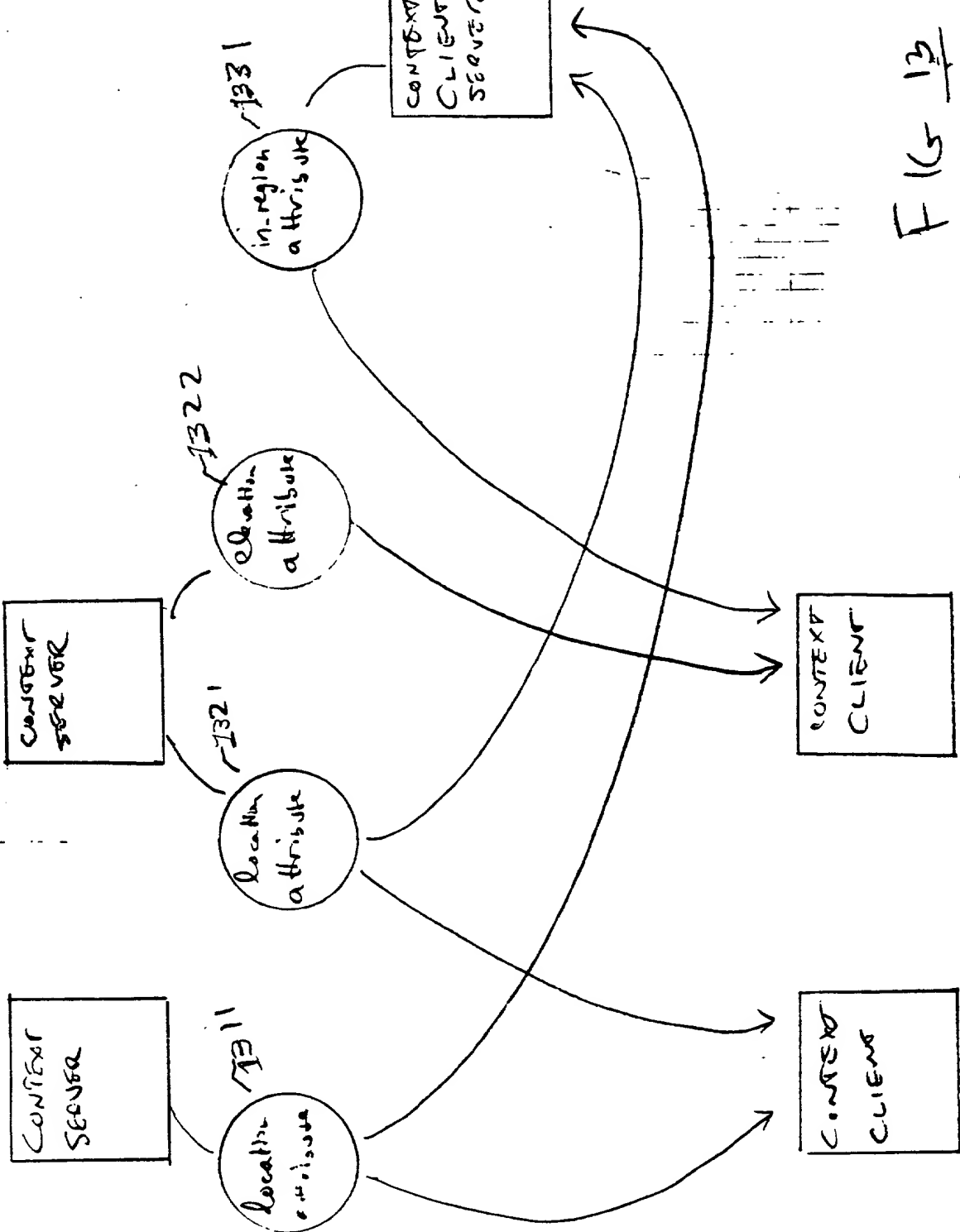


FIG. 13



attribute request table

attribute name	context client name
user.location	distance_from_home
user.in_region	location_map
user.location [gps]	location_region_analysis
user.elevation	location_map

Figure 14

1401 ~  
1402 ~  
1403 ~  
1404 ~

1411

1412

**User.**

Desired\_privacy\_level  
 Interruptibility  
 Speed  
 Direction  
 Acceleration  
 Availability.  
   Cognitive\_availability  
   Tactile\_availability  
   Manual\_availability  
   Visual\_availability  
   Oral\_availability  
   Auditory\_availability  
 Proximity.<Item or place name>  
 Mood.

Happiness  
 Sadness  
 Anger  
 Frustration  
 Confusion

**Activity.**

Driving  
 Eating  
 Running  
 Sleeping  
 Talking  
 Typing  
 Walking

**Location.**

Place\_name  
 Latitude  
 Longitude  
 Altitude  
 Room  
 Floor  
 Building  
 Address  
 Street  
 City  
 County  
 State  
 Country  
 Postal\_Code

Destination. (same as User.Location.)

**Physiology.**

Pulse  
 Body\_temperature  
 Blood\_pressure  
 Respiration

**Person.**<name or ID>. (same as User.)

**Platform.****UI.**

Oral\_input\_device\_availability  
 Manual\_input\_device\_availability  
 Tactile\_output\_device\_availability  
 Visual\_output\_device\_availability  
 Auditory\_output\_device\_availability

**Platform. (continued)****CPU.**

Load  
 Speed

**Memory.**

Total\_capacity  
 Used

**Storage.**

Total\_capacity  
 Used

**Connectivity.**

Connection\_status  
 Connection\_speed  
 Connection\_type/device  
 Connection\_activity

**Power.**

Power\_source  
 Power\_level

**Environment.****People.**

Nearest  
 Number\_present  
 Number\_close

**Local.**

Time  
 Date  
 Temperature  
 Pressure  
 Wind\_speed  
 Wind\_direction  
 Absolute\_humidity  
 High\_forecast\_temperature  
 Low\_forecast\_temperature  
 People\_present  
 Ambient\_noise\_level  
 Ambient\_light\_level  
 Days.<previous or future>.  
   High\_temperature  
   Low\_temperature  
   Precipitation\_type  
   Precipitation\_amount

Place.<place name>. (same as Environment.Local)

**Application.****Mail.**

Available  
 New\_messages\_waiting  
 Messages\_waiting\_to\_be\_sent

**Phone.**

Available  
 In\_use  
 On/off  
 Notification\_mechanism  
 Call\_incoming  
 Caller\_ID

**Sound\_recorder.**

Available  
 Recording

Fig. 15

## 1) User Setting

- a) Mental Context
  - i) Meaning
  - ii) Cognition
    - (1) Divided User Attention
    - (2) Task Switching
    - (3) Background Awareness
  - iii) Solitude
  - iv) Privacy
    - (1) Desired Privacy
    - (2) Perceived Privacy
  - v) Social Context
  - vi) Affect
- b) Physical Situation
  - i) Body
    - (1) Biometrics
    - (2) Posture
    - (3) Motion
    - (4) Physical Encumbrment
      - (a) Senses
        - (i) Eyes
        - (ii) Ears
        - (iii) Tactile
        - (iv) Hands
        - (v) Nose
        - (vi) Tongue
      - (b) Workload demands/effects
      - (c) Interaction with computer devices
      - (d) Interaction with people
      - (e) Physical Health
  - ii) Environment
    - (1) Time/Space
    - (2) Objects
    - (3) Persons
      - (a) Audience/Privacy Availability
        - (i) Scope of Disclosure
        - (ii) Hardware affinity for privacy
        - (iii) Privacy Indicator for User
        - (iv) Privacy Indicator for Public
        - (v) Watching Indicator
        - (vi) Being Observed Indicator
    - (4) Ambient Interference
      - (a) Visual
      - (b) Audio
      - (c) Tactile

## 2) Computer

- a) Power
- b) Configuration
  - i) User Input Systems
    - (1) Hand/Haptic
      - (a) Keyboard/Keystrokes
    - (2) Voice/Audio
    - (3) Eye Tracking
    - (4) Cursors
      - (a) Axis
      - (b) Resolution
        - (i) Selection
        - (ii) Invocation
      - (c) Accelerators
  - ii) Output Systems
    - (1) Visual
      - (a) Resolution
    - (2) Audio
      - (a) Public/Private
    - (3) Haptic
  - iii) External Resources
    - (1) I/O devices
    - (2) Connectivity
- c) Data
  - i) Quantity/State
  - ii) Urgency/Importance
    - (1) Use of Prominence
  - iii) Modality
  - iv) Sensitivity/Purpose
    - (1) Privacy Issues
    - (2) Use of Association
    - (3) Use of Safety
  - v) Source/Ownership
    - (1) Types
      - (a) User generated
      - (b) Other computers or people
      - (c) Sensor
      - (d) PC State
    - (2) Use of Association

Fig. 16

Fig. 17

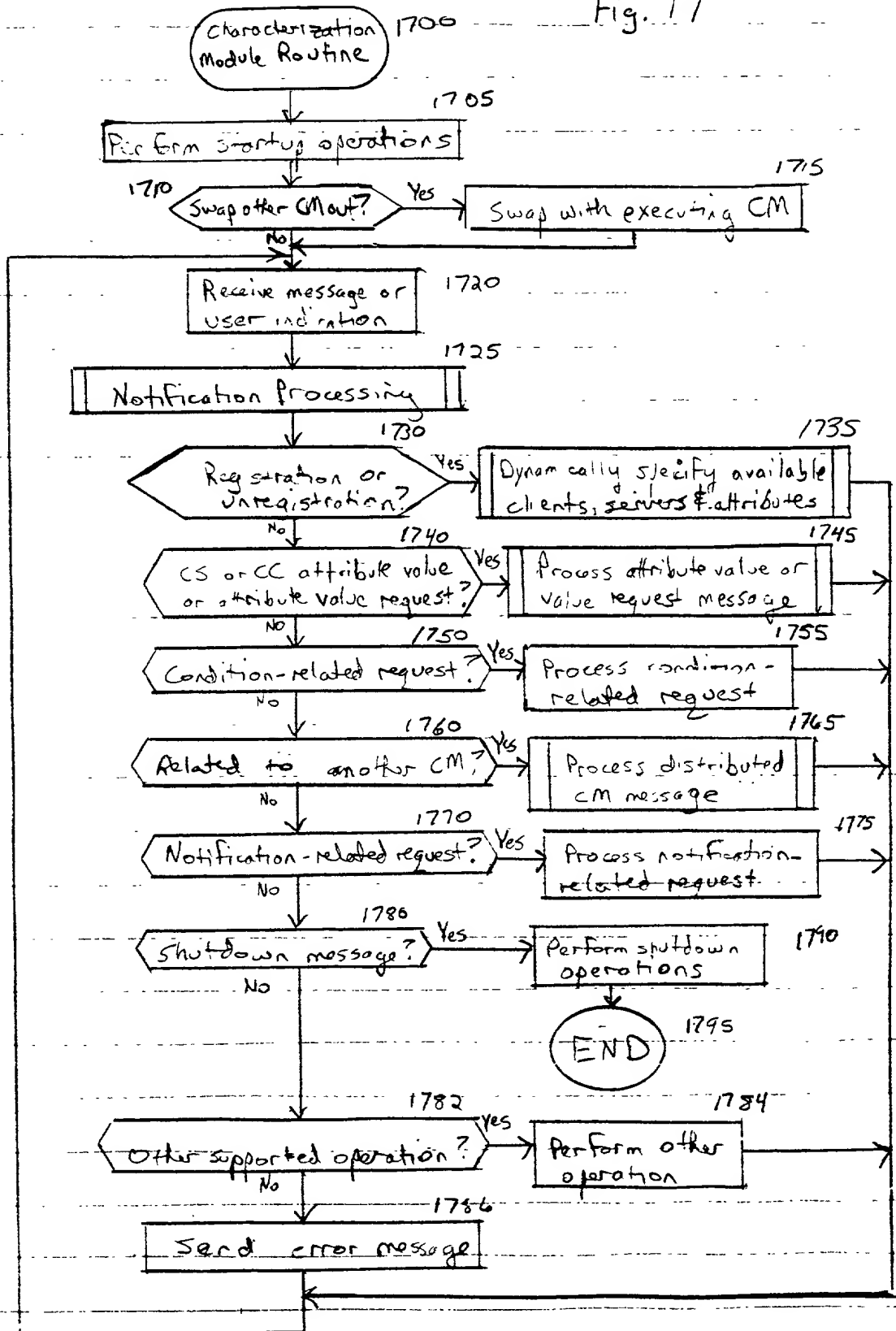


Fig. 18

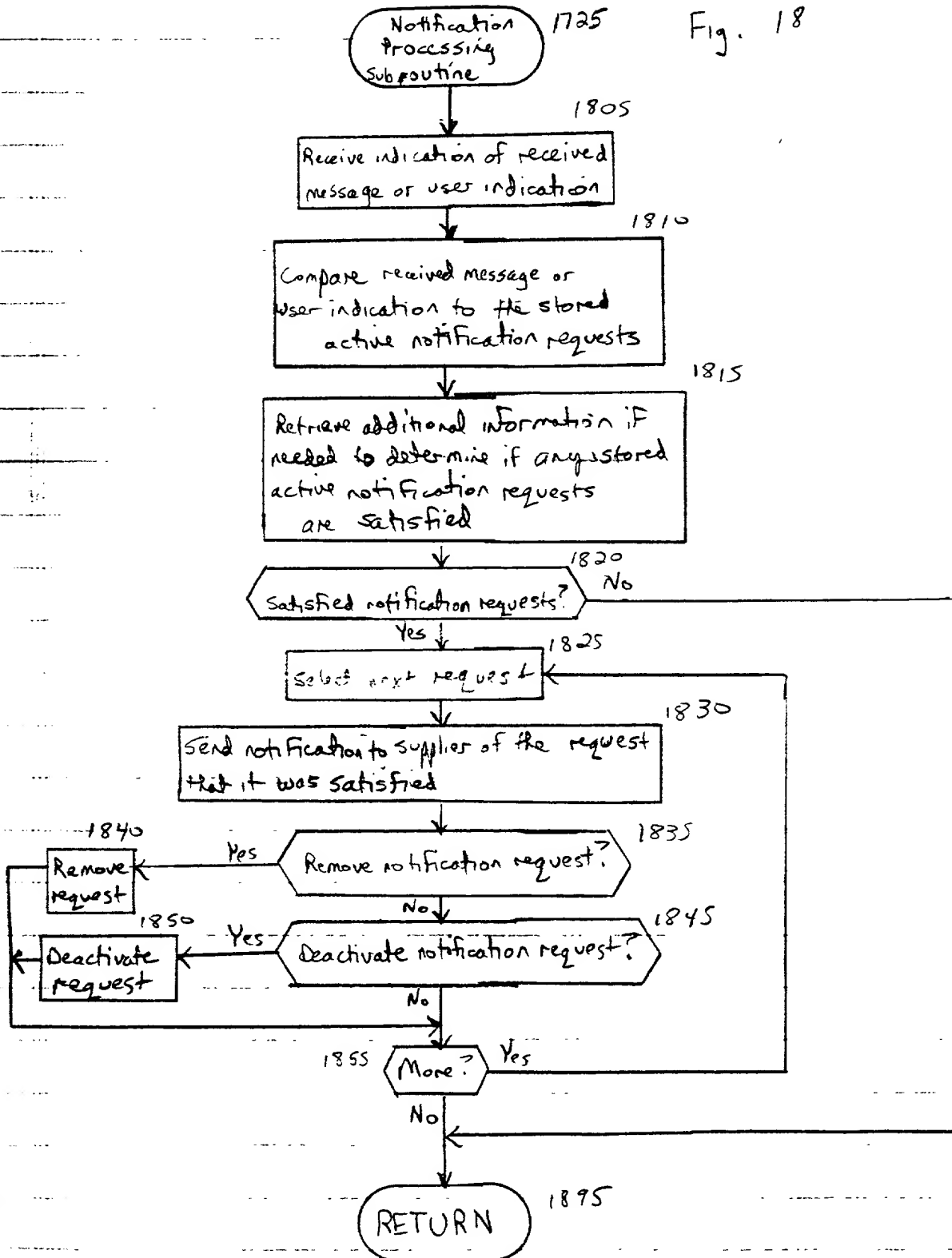
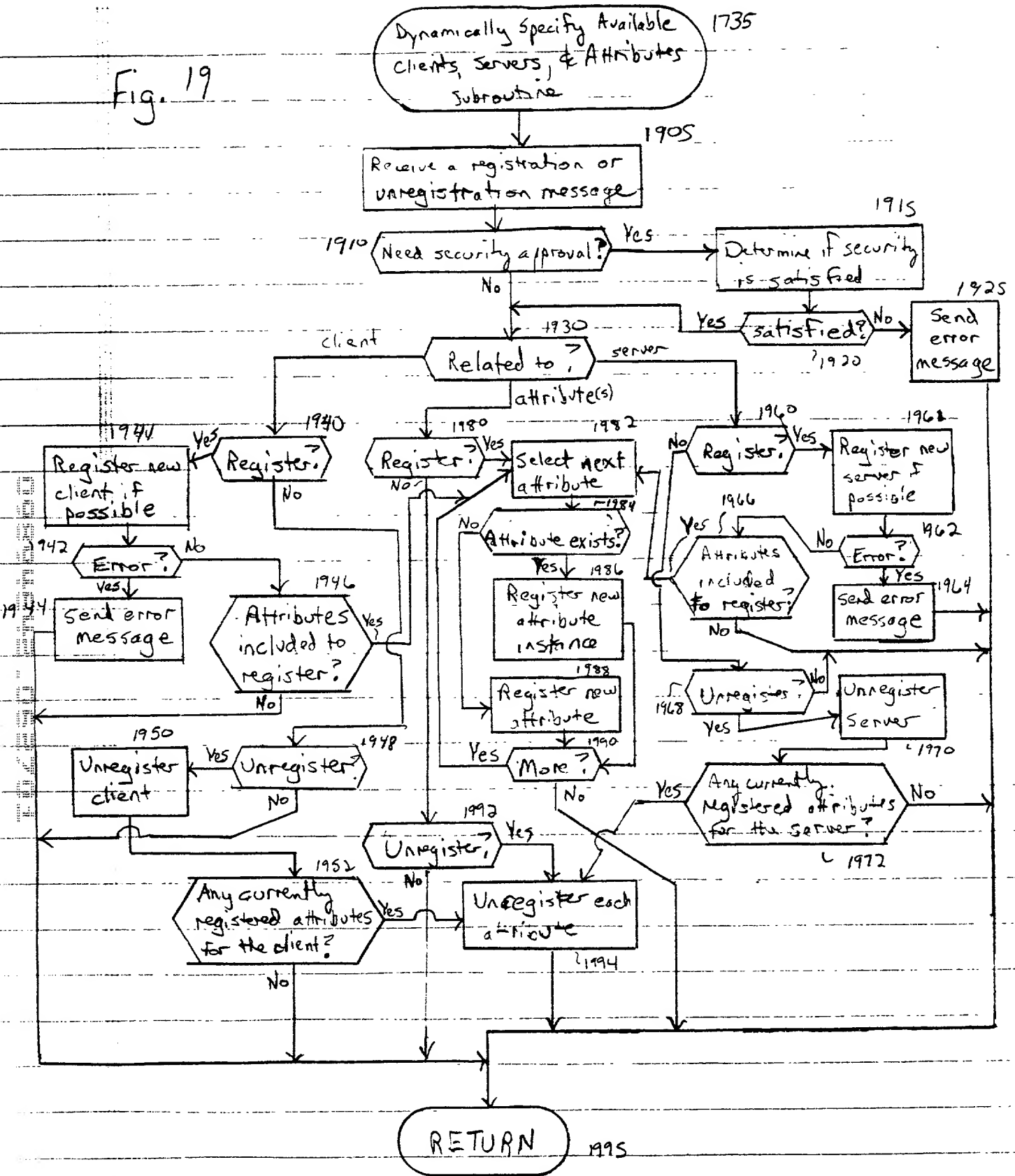


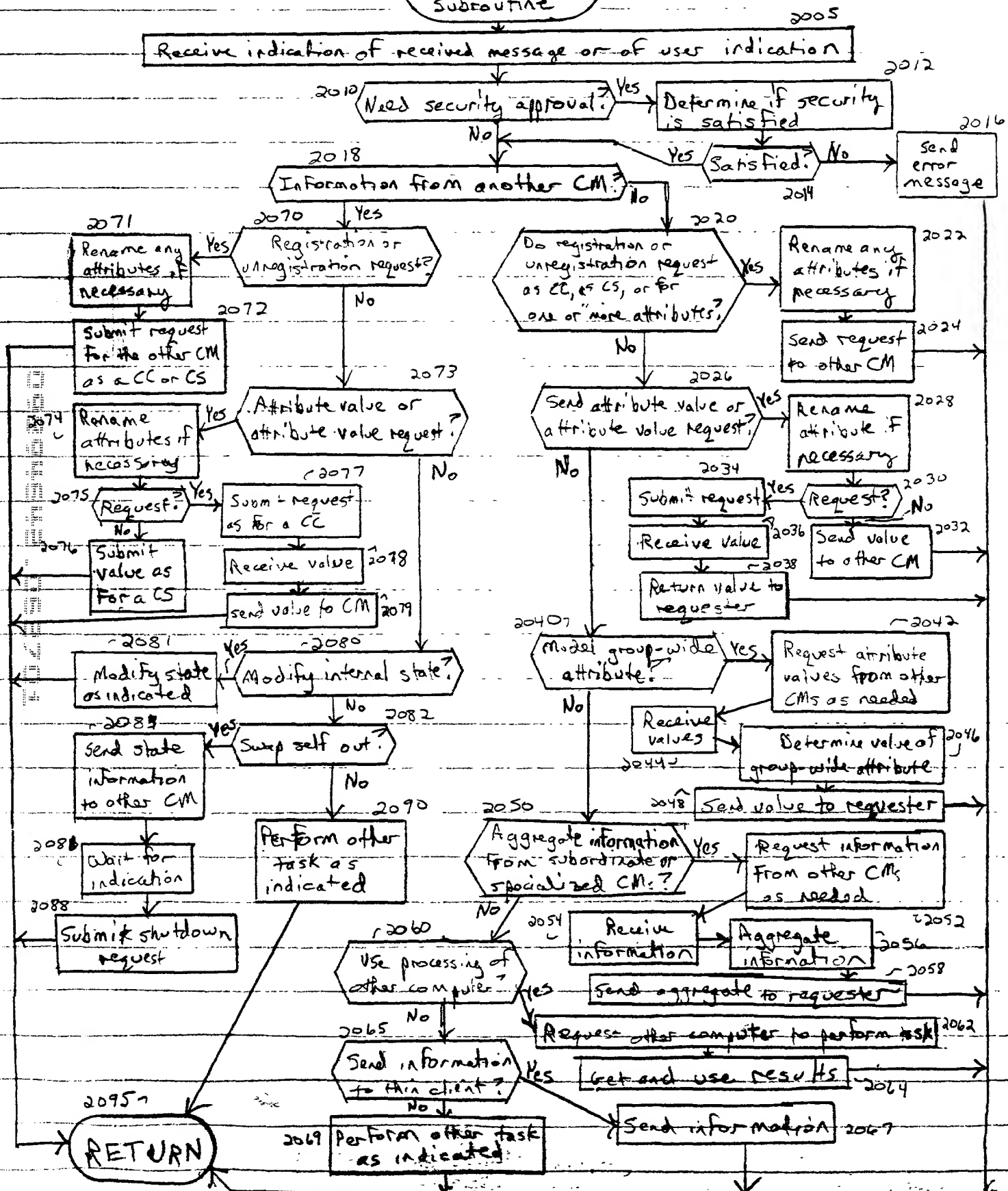
Fig. 19



# Process Distributed CM Message Subroutine

1765

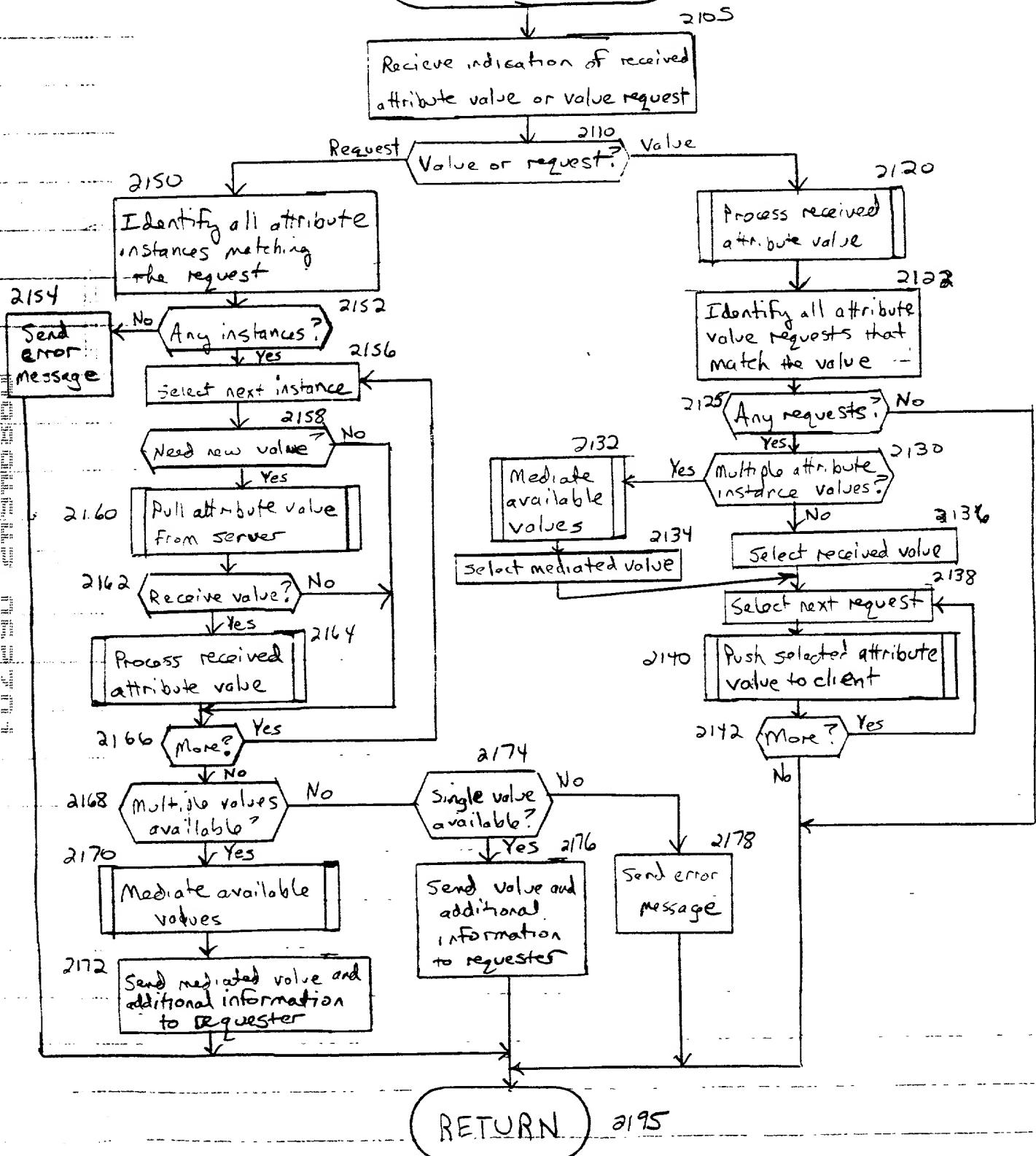
Fig. 20





# Process Attribute Value or Value Request Message Subroutine

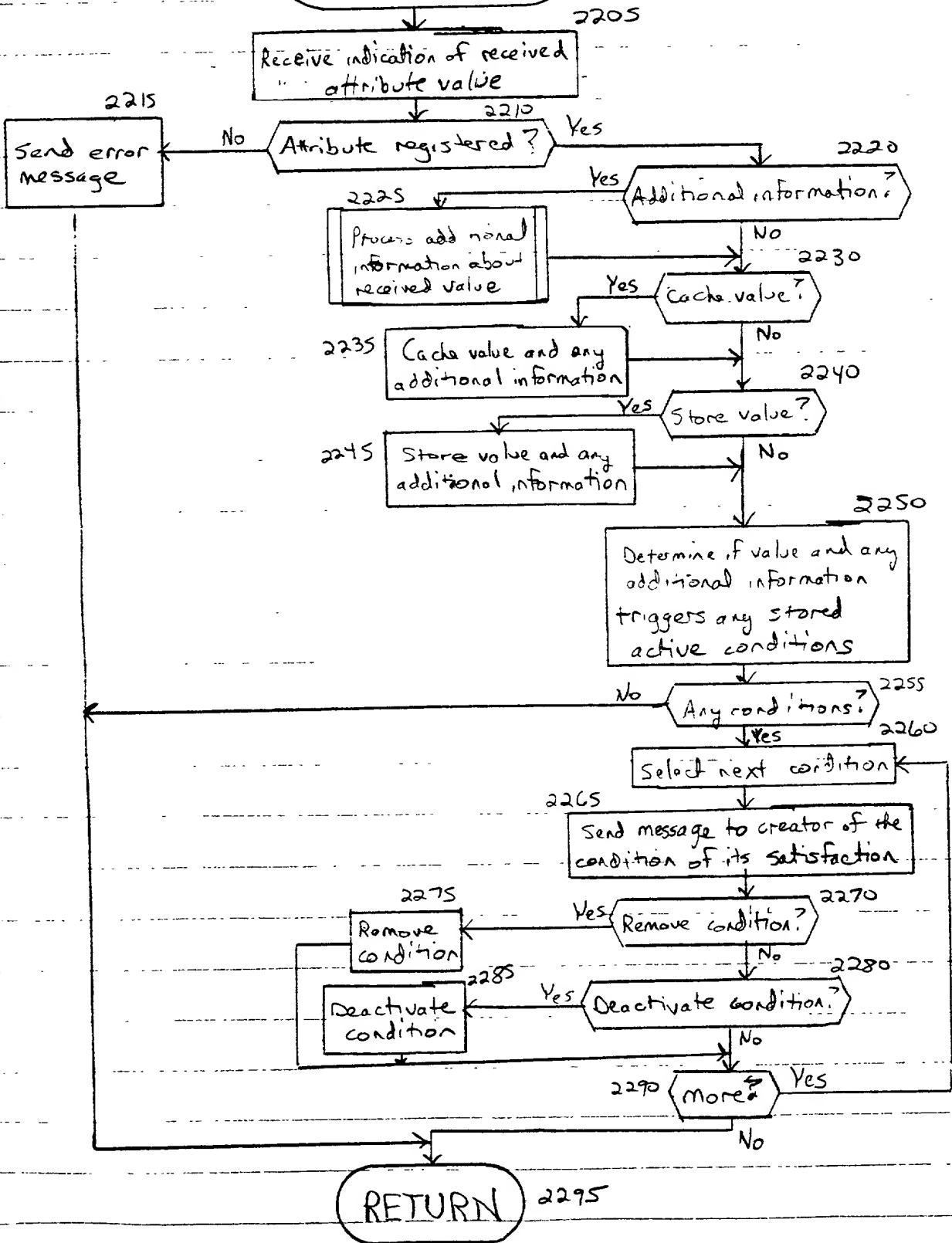
Fig. 21



Process Received  
Attribute Value  
subroutine

2200

Fig 22



2225

Fig. 23

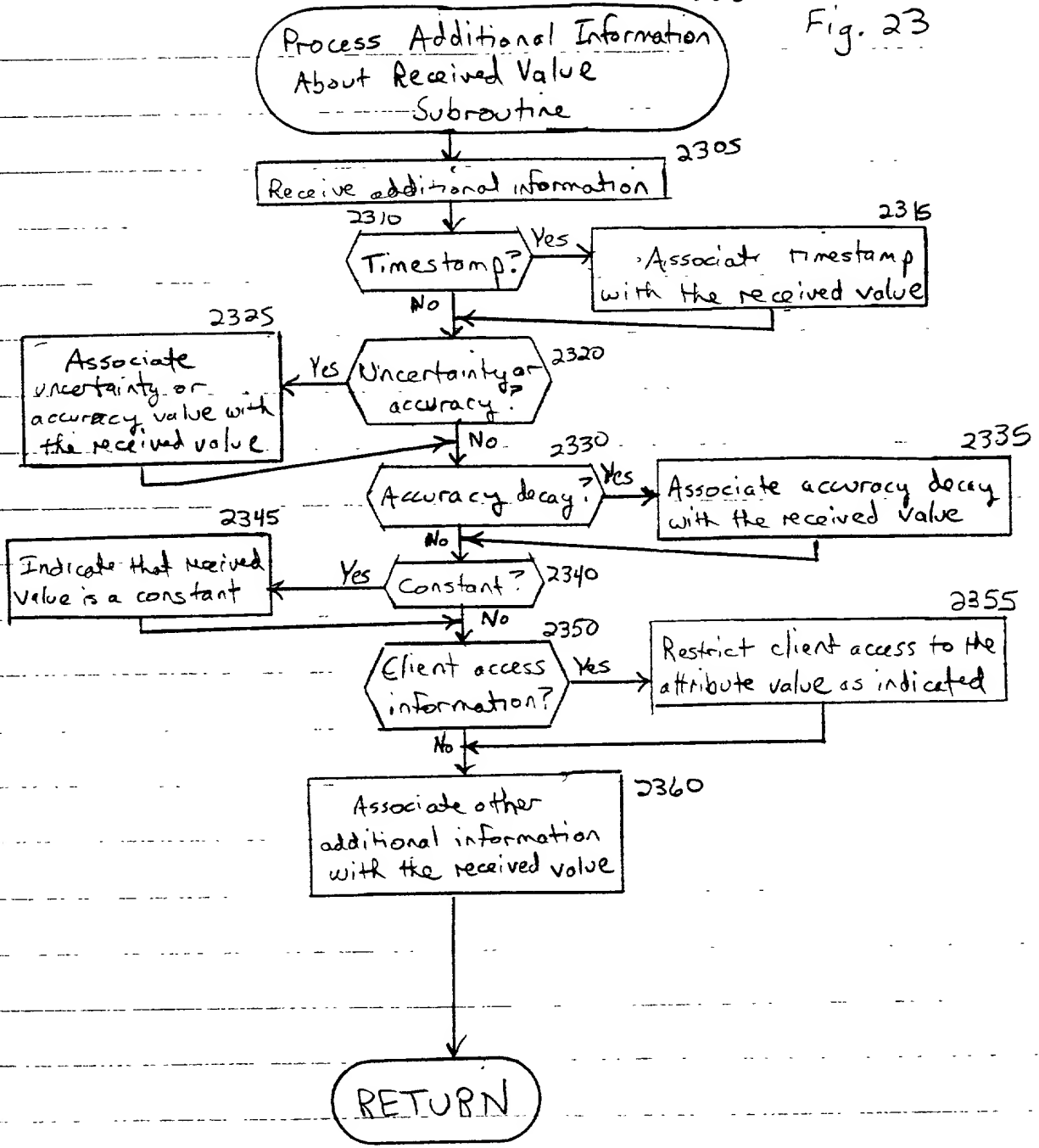


Fig. 24

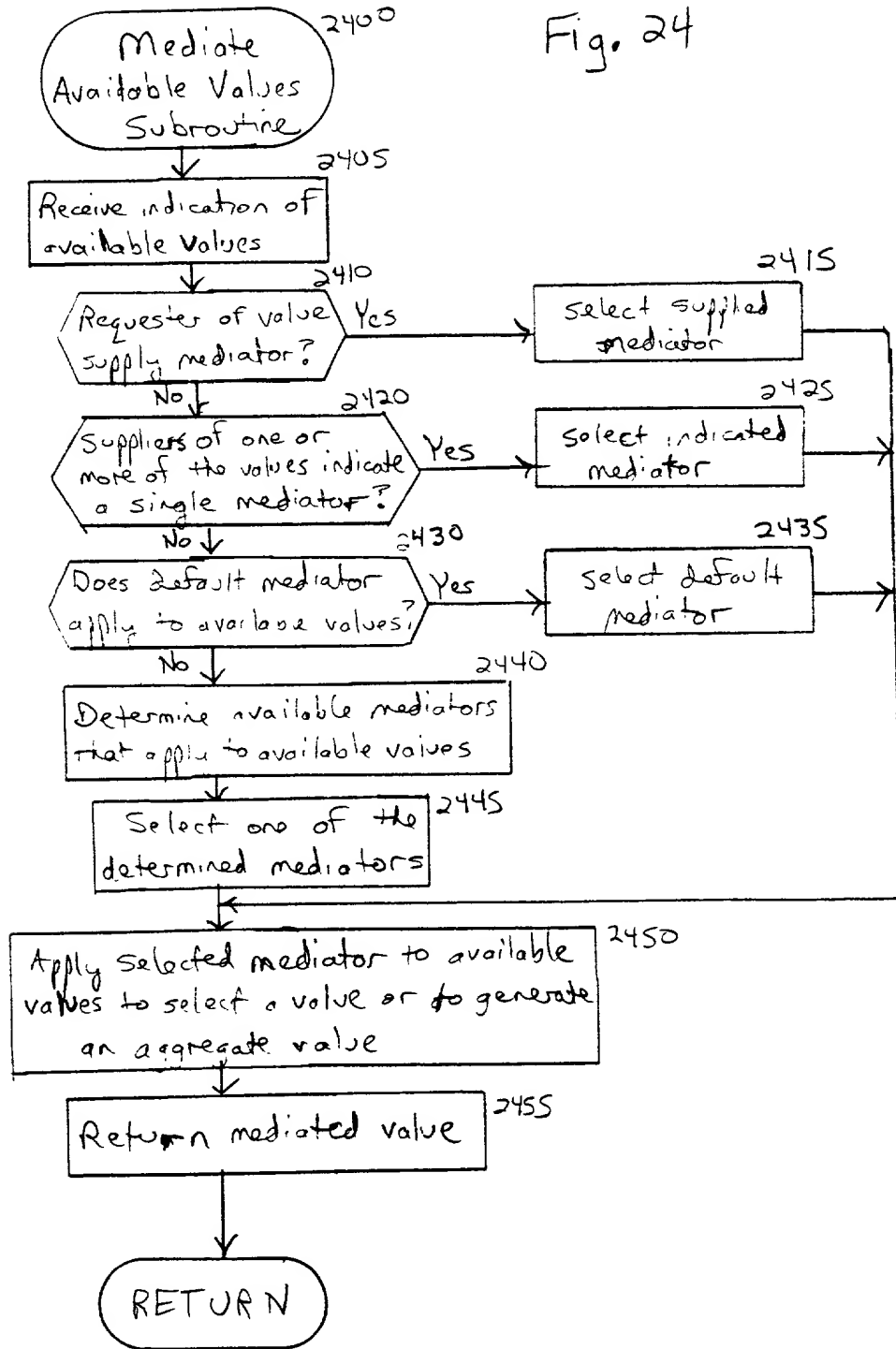


Fig. 25

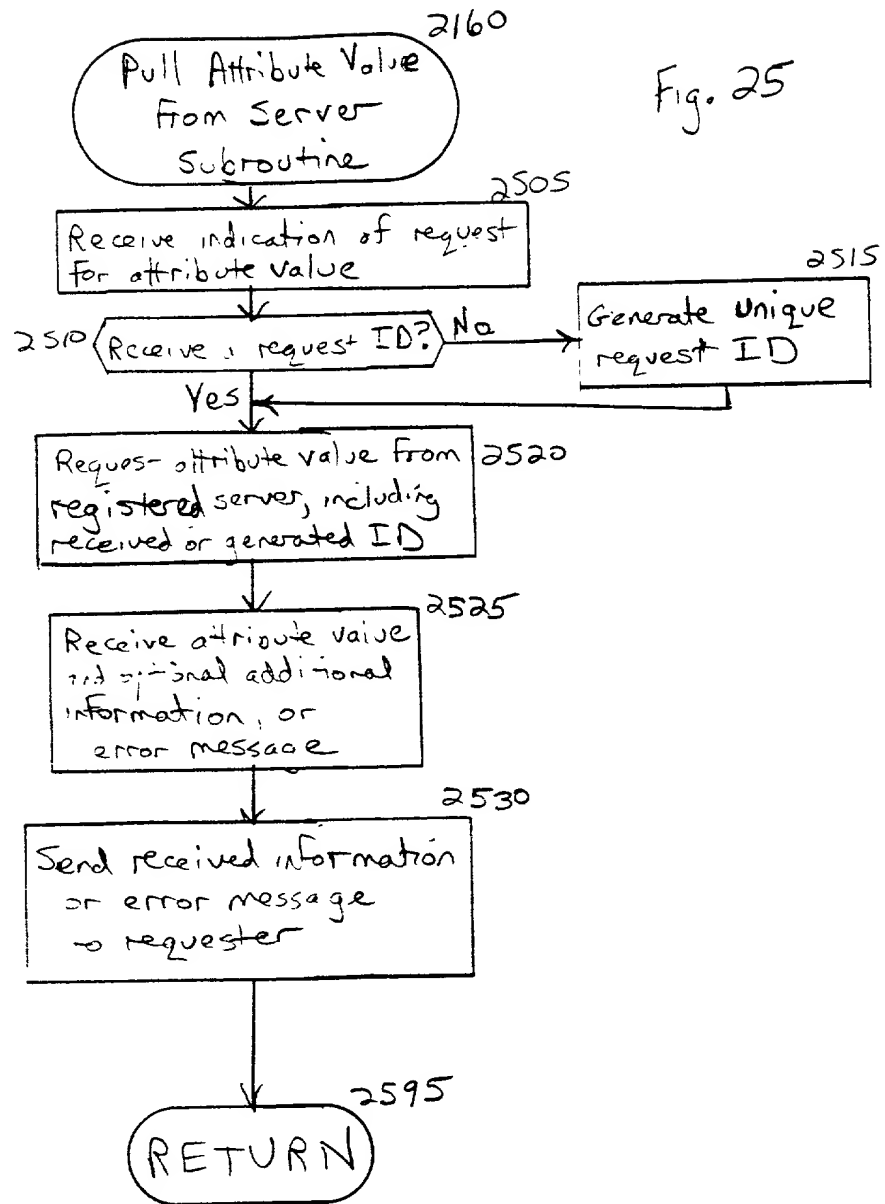
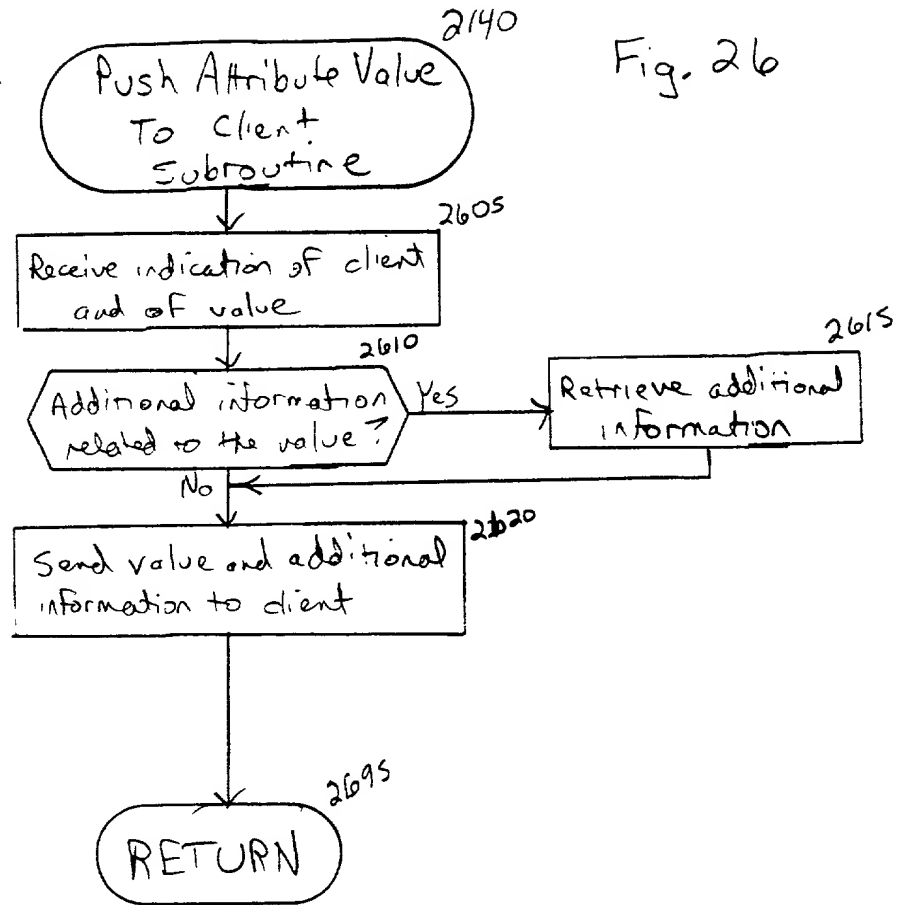
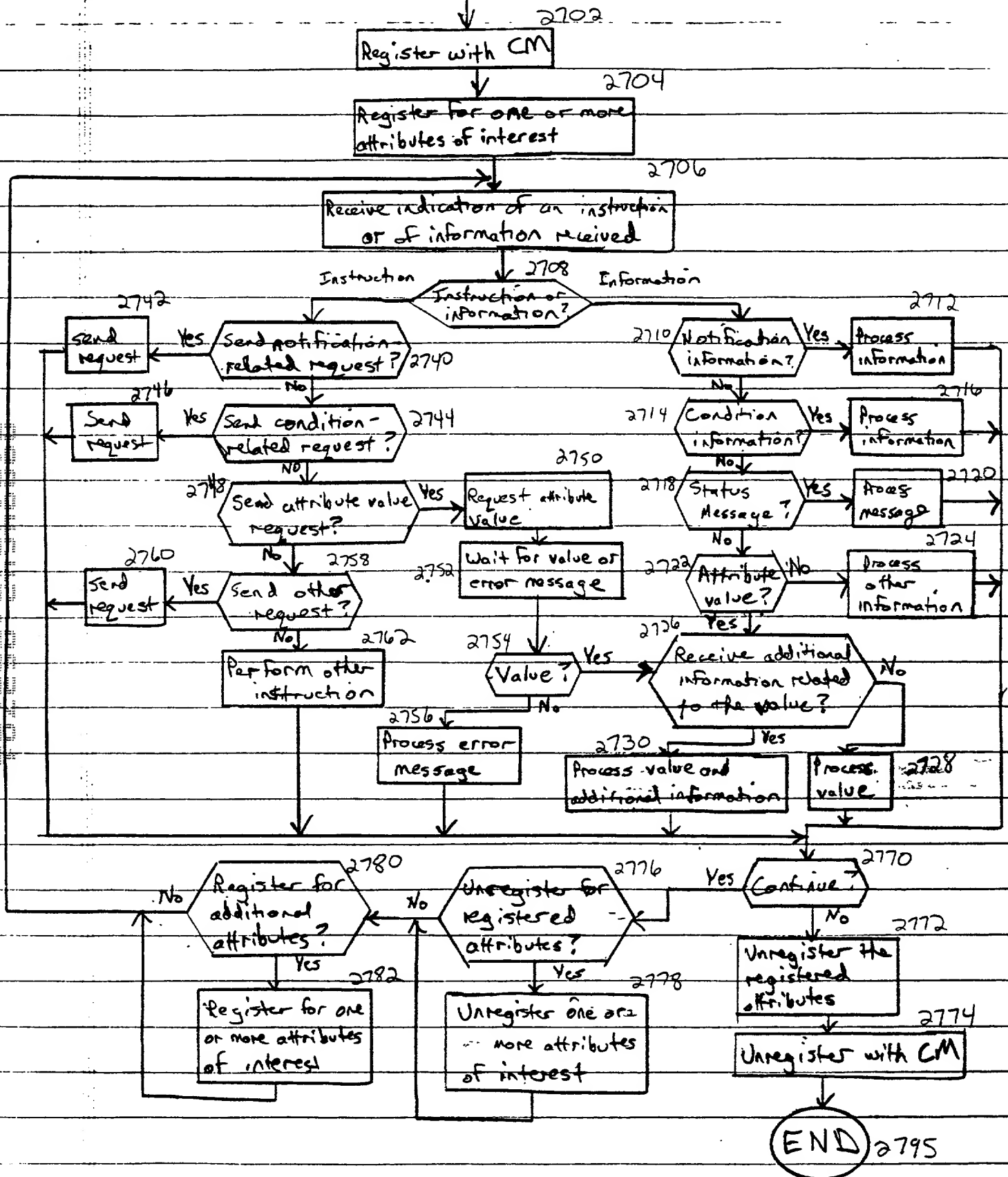


Fig. 26



Context Client Routine 2700

Fig. 27



# Context Server Routine 2800

Fig. 28

